

Handheld Longwave Infrared Camera Based on Highly-Sensitive Quantum Well Infrared Photodetectors, Phase I

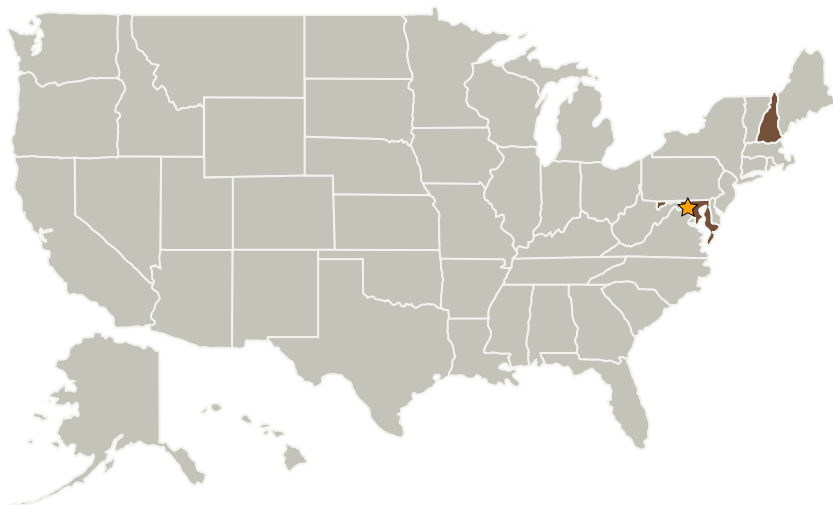
Completed Technology Project (2007 - 2007)



Project Introduction

We propose to develop a compact handheld longwave infrared camera based on quantum well infrared photodetector (QWIP) focal plane array (FPA) technology. Based on the photoexcitation of electrons out of quantum wells of GaAs sandwiched between AlGaAs barriers, QWIP FPAs have emerged as a promising new candidate for longwave infrared imaging and spectroscopy, offering superb sensitivity, pixel operability and uniformity, adjustable spectral response (3-20 microns), and extension to large formats. We will DELIVER a prototype camera at the end of Phase 1 so that NASA can test it in the field for its applications. In Phase 2, we will tailor the spectral response of the detector array to 8-12 microns, expand its format to 1Kx1K, and package and deliver the resulting wideband camera to NASA for spectroscopic/imaging studies in this spectral range.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Goddard Space Flight Center (GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
QmagiQ, LLC	Supporting Organization	Industry	Nashua, New Hampshire



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations

Maryland

New Hampshire

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.1 Detectors and Focal Planes